

## IN THE CLAIMS

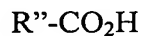
Please amend the claims as follows:

Claims 1-19 (Canceled).

Claim 20 (New): A process for preparing 3-cyano-3,5,5-trimethylcyclohexanone (isophoronenitrile) by reacting isophorone with hydrogen cyanide in the presence of a base as a catalyst selected from alkali metal and alkaline earth metal cyanides, alkali metal and alkaline earth metal hydroxides, alkali metal and alkaline earth metal oxides and alkali metal and alkaline earth metal alcoholates to obtain a crude isophoronenitrile product, and subsequently distilling the crude isophoronenitrile product, which comprises adding, before a distillation, at least one sulfonic acid or carboxylic acid selected from the group consisting of



where R is a linear or branched C<sub>1</sub>- to C<sub>24</sub>-alkyl radical which may optionally be substituted by -CO<sub>2</sub>R' where R' is hydrogen or an alkyl radical, or by a phosphonic acid group, a phenyl radical substituted by linear or branched C<sub>2</sub>- to C<sub>24</sub>-alkyl radicals, nitro, sulfo or hydroxyl groups; or a substituted or unsubstituted fused aromatic radical; aliphatic polysulfonic acids; condensates of naphthalene- or phenolsulfonic acids, aliphatic polycarboxylic acids; and



where R'' is a linear or branched C<sub>2</sub>- to C<sub>24</sub>-alkyl radical which may optionally be substituted by one or more phosphonic acid groups; a phenyl radical which is unsubstituted or substituted by linear or branched C<sub>1</sub>- to C<sub>24</sub>-alkyl groups, nitro, sulfo or hydroxyl groups; or an unsubstituted or substituted fused aromatic radical.

Claim 21 (New): The process as claimed in claim 20, wherein the carboxylic acid or sulfonic acid is added in an amount of 1 acid equivalent, based on 1 base equivalent of the base used as the catalyst.

Claim 22 (New): The process as claimed in claim 20, wherein the base used as the catalyst is used in an amount of from 0.01 to 20% by weight, based on the isophorone used.

Claim 23 (New): The process as claimed in claim 20, wherein the reaction is carried out at temperatures of from 80 to 220°C, preferably from 120 to 200°C, more preferably from 150 to 200°C.

Claim 24 (New): The process as claimed in claim 20, wherein the reaction is carried out at a pressure of from 1 to 5 bar, preferably from 1 to 3 bar.

Claim 25 (New): The process as claimed claim 20, wherein the distillation is carried out in a rectification column.

Claim 26 (New): The process as claimed in claim 20, wherein the reaction, the addition of the sulfonic acid or carboxylic acid and the subsequent distillation are carried out continuously.

Claim 27 (New): The process as claimed in claim 20, wherein at least one acid selected from the group consisting of naphthalenesulfonic acids, alkyl-substituted naphthalenesulfonic acids and alkyl-substituted benzenesulfonic acids having an alkyl radical having  $\geq 4$  carbon atoms is used before the distillation.

Claim 28 (New): A process for preparing 3-cyano-3,5,5-trimethylcyclohexanes (isophoronenitrile) comprising the following steps:

- a) isophoronenitrile synthesis by reaction of isophorone with hydrogen cyanide in the presence of a base as a catalyst selected from alkali metal and alkaline earth metal cyanides, alkali metal and alkaline earth metal hydroxides, alkali metal and alkaline earth metal oxides and alkali metal and alkaline earth metal alcoholates to obtain a crude isophoronenitrile product,
- b) neutralization of the reaction mixture obtained in step a) with a sulfonic acid or carboxylic acid selected from the group consisting of



where R is a linear or branched C<sub>1</sub>- to C<sub>24</sub>-alkyl radical which may optionally be substituted by -CO<sub>2</sub>R' where R' is hydrogen or an alkyl radical, or by one or more phosphonic acid groups, a phenyl radical substituted by linear or branched C<sub>2</sub>- to C<sub>24</sub>-alkyl radicals, nitro, sulfo or hydroxyl groups; or a substituted or unsubstituted fused aromatic radical; aliphatic polysulfonic acids; condensates of naphthalene- or phenolsulfonic acids, aliphatic polycarboxylic acids; and



where R'' is a linear or branched C<sub>2</sub>- to C<sub>24</sub>-alkyl radical which may optionally be substituted by one or more phosphonic acid groups; a phenyl radical which is substituted by linear or branched C<sub>1</sub>- to C<sub>24</sub>-alkyl groups, nitro, sulfo or hydroxyl groups; or an unsubstituted or substituted fused aromatic radical,

- c) distillation of the reaction mixture obtained in step b).

Claim 29 (New): The process as claimed in claim 28, wherein the neutralization in step b) is carried out with a sulfonic acid selected from the group consisting of naphthalenesulfonic acids, alkyl-substituted naphthalenesulfonic acids and alkyl-substituted benzenesulfonic acids having an alkyl radical having  $\geq 4$  carbon atoms.

Claim 30 (New): A method of avoiding precipitates in the neutralization of a base selected from alkali metal and alkaline earth metal cyanides, alkali metal and alkaline earth metal hydroxides, alkali metal and alkaline earth metal oxides and alkali metal and alkaline earth metal alcoholates used as a catalyst in the reaction of isophorone with hydrogen cyanide in the presence of said base, comprising the step of adding a sulfonic acid or carboxylic acid as claimed in claim 20 as a neutralizing agent before distillation of a crude isophoronenitril product which has been obtained by said reaction.

Claim 31 (New): The method as claimed in claim 30, wherein a sulfonic acid is used selected from the group consisting of naphthalenesulfonic acids, alkyl-substituted naphthalene sulfonic acids and alkyl-substituted benzenesulfonic acids having an alkyl radical having  $\geq 4$  carbon atoms.

Claim 32 (New): A process for preparing 3-cyano-3,5,5-trimethylcyclohexanone (isophoronenitrile) by reacting isophorone with hydrogen cyanide in the presence of a base as a catalyst selected from alkali metal and alkaline earth metal cyanides, alkali metal and alkaline earth metal hydroxides, alkali metal and alkaline earth metal oxides and alkali metal and alkaline earth metal alcoholates to obtain a crude isophoronenitrile product, and subsequently distilling the crude isophoronenitrile product, which comprises adding, before a distillation, at least one sulfonic acid or carboxylic acid selected from the group consisting of

naphthalenesulfonic acids, alkyl-substituted naphthalenesulfonic acids and alkyl-substituted benzenesulfonic acids having an alkyl radical having  $\geq 4$  carbon atoms.

Claim 33 (New): A process for preparing 3-cyano-3,5,5-trimethylcyclohexanes (isophoronenitrile) as claimed in claim 32 comprising the following steps:

- a) isophoronenitrile synthesis by reaction of isophorone with hydrogen cyanide in the presence of a base as a catalyst selected from alkali metal and alkaline earth metal cyanides, alkali metal and alkaline earth metal hydroxides, alkali metal and alkaline earth metal oxides and alkali metal and alkaline earth metal alcoholates to obtain a crude isophoronenitrile product,
- b) neutralization of the reaction mixture obtained in step a) with a sulfonic acid selected from the group consisting of naphthalenesulfonic acids, alkyl-substituted naphthalenesulfonic acids and alkyl-substituted benzenesulfonic acids having an alkyl radical having  $\geq 4$  carbon atoms.

Claim 34 (New): A method for avoiding precipitates in the neutralization of a base selected from alkali metal and alkaline earth metal cyanides, alkali metal and alkaline earth metal hydroxides, alkali metal and alkaline earth metal oxides and alkali metal and alkaline earth metal alcoholates used as a catalyst in the reaction of isophorone with hydrogen cyanide in the presence of said base, comprising the step of adding a sulfonic selected from the group consisting of naphthalenesulfonic acids, alkyl-substituted naphthalenesulfonic acids and alkyl-substituted benzenesulfonic acids having an alkyl radical having  $\geq 4$  carbon atoms as a neutralizing agent before distillation of a crude isophoronenitrile product which has been obtained by said reaction.

Claim 35 (New): The process as claimed in claim 32, wherein the sulfonic acid is diisobutylnaphthalenesulfonic acid or dodecylbenzenesulfonic acid.

Claim 36 (New): The method as claimed in claim 34, wherein the sulfonic acid is diisobutylnaphthalenesulfonic acid or dodecylbenzenesulfonic acid.

Claim 37 (New): The process as claimed in claim 20, wherein the base is sodium cyanide and the at least one sulfonic acid or carboxylic acid is selected from the group consisting of toluenesulfonic acid, methanesulfonic acid, diisobutylnaphthalenesulfonic acid, dodecylbenzenesulfonic acid and 2-ethylhexanoic acid.

Claim 38 (New): The method as claimed in claim 30, wherein the sulfonic acid or carboxylic acid is selected from the group consisting of toluenesulfonic acid, methanesulfonic acid, diisobutylnaphthalenesulfonic acid, dodecylbenzenesulfonic acid and 2-ethylhexanoic acid, and the base is sodium cyanide.